BIOLOGICAL EVALUATION OF FOREST INSECT CONDITIONS ON THE BOISE NATIONAL FOREST DURING 1970

Prepared by: Jerry A.E. Knopf

J. A. E. Knopf
Boise Zone Entomologist

Recommended by: A. M. Rivas

A. M. Rivas
Chief, Branch of Forest Insect and Disease
Prevention and Control

Approved by: M.C. Galbraith

Marlin C. Galbraith
Acting Regional Forester

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The following report is a record of major forest insect activity on the Boise National Forest in 1970. Information was compiled from aerial detection surveys, on-the-ground biological evaluations, and from detection reports submitted by the Forest staff.

An administrative study was completed on the Forest to determine if a synthetic attractant (Frontalin) would aggregate adult populations of the Douglas-fir beetle. A description of procedures and results is appended.

The Douglas-fir beetle continued to cause heavy losses on the southern half of the Forest. This epidemic has been in progress for five years and indications point toward continuing high-level losses in 1971. Mountain pine beetle activity in lodgepole pine increased significantly in little Sagehen Basin and in the headwaters of Clear Cr. southeast of Cascade. Increased mountain pine beetle activity was observed in ponderosa pine stands south of Sagehen Reservoir. Engraver beetles, Ips spp. remained at relatively low levels. Spruce budworm defoliation in the Primitive Area declined in area affected and intensity of defoliation.

DOUGLAS-FIR BEETLE - Dendroctonus pseudotsugae Hopk.

Historically, Douglas-fir beetle epidemics in southern Idaho have built up rapidly, caused large-scale group killing, and persisted from five to seven or more years. To date no suppression measures have been effective in controlling this destructive bark beetle. Some attempts have been made at logging for control; however, due to the widespread areas of attack this procedure has been of little value.

Current high levels of activity were triggered during the winter of 1964-65 when thousands of trees were felled by wet heavy winter snows and high winds following warm rains that softened granitic soils. The following spring and summer Douglas-fir beetles attacked the downed trees. Emerging beetles in 1966 successfully attacked and killed large groups of standing trees and thus started an epidemic that has persisted for five years.

Wherever possible sales were shifted to infestation centers and beetle loaded trees harvested. Also, special salvage sales were made and a trap tree program was tried. However, due to the profusion of epidemic centers and vast land areas involved no control was gained.

A discussion of the 1970 administrative study involving attractants of the Douglas-fir beetle is attached to the appended report of that study.

MOUNTAIN PINE BEETLE - Dendroctonus ponderosae Hopk.

Losses in lodgepole pine have increased at a steady rate for the past two years. These buildups have coincided with epidemics along the North Fork of the Payette River throughout Round and Long Valleys where infestations are primarily on private and Bureau of Land Management lands. Increasing losses were also observed along Clear Creek southeast of Cascade, Idaho, with tree killing extending onto Federal lands.

The Clear Creek infestation is confined to a relatively narrow creek bottom stringer of lodgepole pine. Boise Cascade Corporation attempted to log infested pines in this area; however, the gypo-type operation turned out to be a large diameter "creaming" type show with the end result of many infested trees left standing. This residual infestation has the potential to perpetuate continuing losses.

Of greatest concern is the fact that the Clear Creek infestation is encroaching on Forest lands. An evaluation of the area was made in September with the following results:

Lodgepole pine type in the upper reaches of Clear Creek occur as pole stands of relatively uniform age and d.b.h. interspersed with somewhat well defined areas of older, larger d.b.h. pines. It is the latter category which is currently being attacked by the beetle. There is considerable mix of type in the upper four miles of the drainage which breaks

up the continuity of the lodgepole stands. This intermix of non-host trees quite naturally and effectively precludes total loss of large diameter, merchantable conifer habitat to the beetle, even though a noticeable reduction in mature lodgepole pine may occur.

On the Emmett Ranger District the mountain pine beetle is showing increasing activity in ponderosa pine stands near Sagehen Reservoir and throughout Little Sagehen Basin where approximately 150-200 faded lodgepole pines were aerially detected. Ground evaluations of those trees will be done when the area becomes accessible in the spring of 1971.

PINE ENGRAVER - Ips. spp.

For the second consecutive year Ips activity remained at a low level. Small groups of stagnated overmature ponderosa pine adjacent to timber sales were attacked by engravers. These small spot outbreaks were observed on the Garden Valley and Cottonwood Ranger Districts.

In 1969 Ips caused severe damage to ponderosa pine stands on the Ola slope, Emmett District. These buildups were associated with logging activities where Ips developed to epidemic numbers in slash. At that time we were able to effect control by mist blowing Lindane on slash piles just prior to adult emergence. Standing tree attacks in and adjacent to this area, the remainder of the season, were nominal. This is especially significant since no fresh logging debris was provided after the insecticide application, and standing tree attacks would have occurred if sizeable populations survived. This program plus revisions in cutting schedules reduced losses to tolerable levels.

In addition, weather patterns in 1970 were not favorable for Ips development. The combination of these factors so interrupted Ips activity that little damage was recorded throughout the 1970 field season.

SPRUCE BUDWORM (western form) - Choristoneura occidentalis Free.

For the most part, this serious defoliator has declined in area and intensity of defoliation since 1965. In 1964 over 70,000 acres of Douglas-fir, true firs, and spruce were defoliated. The 1970 surveys revealed less than 6,000 acres affected. Following is a seven-year resume of acres, and defoliation intensity:

	Defoliation Class			
Year	Light	Moderate	Heavy	Total
1963	2,400	10,081	43,680	56,160
1964	20,800	28,800	24,000	73,600
1965	-	-	60,200	60,200
1966	56,800	2,600	-	59,400
1967	25,100	3,800	-	28,900
1968	12,440	11,560	3,680	27,680
1969	21,500	8,000	1,500	31,000
1970	4,600	1,200	-	5,800

During the late summer of 1964 and spring of 1965 unseasonable low temperatures coincided with larval migrations. Budworm populations have shown a steady decline since that time. One of the many possible factors that may have caused this decline was subfreezing weather during the period when young larvae broke hibernation. Other factors, such as the influence of predators and parasites, have undoubtedly combined to cause decreases in budworm populations.